

Page 6
Serial No. 10/725,914
Response to Official Action

In the Drawings

There are no amendments to the drawings.

Remarks

Applicant has amended claims 1, 4, 6, 9 and 13. Applicant respectfully submits that no new matter was added by the amendment, as all of the amended matter was either previously illustrated or described in the drawings, written specification and/or claims of the present application. (See, pars. 5, 6, 18 & 19). Entry of the amendment and favorable consideration thereof is earnestly requested.

Claim 1 further recites "the mixture is set individually on the two sides of the substrate" and Claim 13 further recites "applying the mixture of gases individually to opposing sides of the substrate." Applicant respectfully submits that neither U.S. Patent No. 6,183,565 ("Granneman et al.") nor U.S. Patent No. 5,318,801 ("Snail et al.") teaches or suggests these limitations.

For example, the examiner has stated that Granneman et al. "does not expressly teach that the heat-conducting medium is a mixture of at least two gases." (Official Action 11/16/05, p. 4). In addition, Snail et al. does not show a mixture of different gases on both sides of the substrate. Rather, Snail et al. teaches that a gas mixture is applied to "lower surface 26" and that "gas flow through the threaded gap interface 32 carries heat away from the substrate mount rod 12 and the substrate." (Col. 5, lines 10-13 & 24-26).

Therefore, because neither Granneman et al. nor Snail et al. teach, disclose or suggest that a mixture is set individually on the two sides of the substrate as recited in Claim 1 or applying the mixture of gases individually to opposing sides of the substrate as recited in Claim 13, no combination thereof can render Claim 1 or 13 obvious.

Claim 1 further recites “the heat-conducting medium used is a mixture of at least two gases with very different thermal conductivities, and the mixture is set individually on the two sides of the substrate in such a manner that the respective surface temperature is time-controlled taking account of the respective heat exchange via thermal radiation.” Claim 13 further recites “controlling the surface temperature of the substrate via the mixture of gases as a time-controlled process.” Applicant respectfully submits that these limitations are not taught by the combination of prior art suggested by the examiner.

The examiner has submitted that U.S. Patent No. 6,183,565 (“Granneman et al.”) “does not expressly teach that the heat-conducting medium is a mixture of at least two gases with very different thermal conductivities” but that U.S. Patent No. 5,318,801 (“Snail et al.”) teaches “that a heat-conducting medium can be a mixture of at least two gases with very different thermal conductivities.” (Official Action 11/16/05, p. 4). The examiner further submits that “[i]t would have been obvious to one of ordinary skill in the art to modify the method taught by Granneman et al. to have the heat-conducting medium be a mixture of at least two gases with very different thermal conductivities” and that the “motivation for making these modifications . . . would have been to allow for precision temperature control during high heat load processes, such as CVD.” (Official Action 11/16/05, p. 5). Applicant respectfully disagrees.

It is well settled that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432

(Fed. Cir. 1990). In the present case, Applicant respectfully submits that Granneman et al. teaches that "at least one of the side sections is heated to a temperature higher than 200°C." (Col. 2, lines 16-18). This method cannot simply be replaced by the heating method taught in Snail et al. For example, Granneman et al. states that "[o]ne of the problems encountered in the prior art when supplying process gas at elevated temperature and more particularly when depositing layers is that the apparatus used to supply the process gas becomes contaminated by deposition of the material concerned from the process gas." (Col. 3, lines 1-9). To address this problem Granneman et al. states

"[w]ith the method according to the invention it is possible to prevent these problems. This is because, according to a further embodiment of this method, a temperature difference is applied over the wafer. One of the side sections is heated to a relatively high temperature, whilst the other of the side sections is heated to a relatively low temperature. It has been found that, as a result of the thermal behavior of the enclosing apparatus, the wafer will assume a temperature which is dependent on the position of the wafer with respect to the two heated side sections. If the two sections are equidistant from the wafer and the same gas is present on both sides, the temperature will fairly accurately be the average of the values of the temperatures of each of the side sections."

(Col. 3, lines 10-23; See *also*, Col. 3, lines 66-67; Col. 4, lines 1-10 & 14-16) (emphasis added). Therefore, a primary teaching of Granneman et al. is to apply a temperature difference over the wafer by heating one side section to a relatively high temperature and another side section to a relatively low temperature. Applicant respectfully submits that there is no motivation to discard the primary teachings of Granneman et al. in view of Snail et al. as the examiner has suggested. See, e.g., MPEP 2143.01 ("The mere fact that references can be combined or modified does not render the resultant combination

obvious unless the prior art also suggests the desirability of the modification.”); *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990).

The present application specifically rejected this approach stating that “the substrate 1 may have different thermal emissivities on its two substrate surfaces” and that a problem may result in “that during heating or cooling of the substrate the substrate surfaces may be at different temperatures. This internal temperature gradient can lead to undesirable deformation.” (Par. 17). However, Granneman et al. teaches that this severe temperature differential is required.

Not only does Granneman et al. fail to teach the desirability of the modification suggested by the examiner, but in fact teaches away from the suggested modification. (See, Col. 2, lines 1-3 “It has been found that only limited heating can take place effectively by heating the gases.”) (emphasis added). Therefore, because Granneman et al. specifically rejected this approach, Applicant respectfully submits that it cannot be obvious to ignore the teachings of the specification in view of the present application. See e.g., *W. L. Gore and Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13, (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (“use of hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is impermissible.”)

It is also well settled that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP 2143.01; *In re Gordon*, 733 F.2d 900, 221 USPQ2d 1125 (Fed. Cir. 1984). In this case, Applicant respectfully

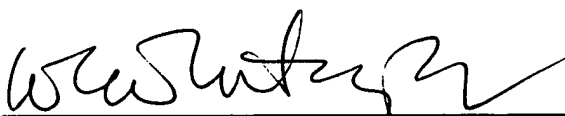
submits that abandonment of the method taught in Granneman et al. would result in a device that does not address or solve the problems presented in the specification. (See, Col. 3, lines 1-9).

Accordingly, Applicant respectfully submits that, because Granneman et al. fails to teach or suggest the desirability of the combination of Granneman et al. with Snail et al., but in fact teaches away from such a modification, such a combination cannot be obvious. Additionally, Applicant respectfully submits that, because the modification of Granneman et al. in view of Snail et al. would result in a system that fails to solve the problems identified in Granneman et al., such a modification cannot be obvious.

It is respectfully submitted that claims 1 and 3-12, all of the claims remaining in the application, are in order for allowance and early notice to that effect is respectfully requested.

Respectfully submitted,

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